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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SINGH, RAMNANDAN P

ART UNIT PAPER NUMBER

2644

DATE MAILED: 09/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/784,827

Applicant(s)

PRENDERGAST ET AL.

Examiner

Dr. Ramnandan Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 11 June 2002 with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

2. **New Prior Art**

In view of new prior art, new grounds of rejections are applied.

### *Drawings*

#### INFORMATION ON HOW TO EFFECT DRAWING CHANGES

3. **Correction of Informalities -- 37 CFR 1.85**

The correction to Fig. 5 is approved.

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

**The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.**

***Terminal Disclaimer***

4. The terminal disclaimer filed on 11 June 2002 disclaiming the terminal portion of any patent granted on this application is accepted. The terminal disclaimer has been recorded.

5. In view of the above, a provision obviousness-type double patenting rejection to claims 1-24 is withdrawn.

***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-11, 13-20 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehlig et al [US 5,550,993] in view of Rahamim et al [US 6,081,586].

Regarding claim 1, Ehlig et al teaches analog communication across an isolation barrier in the form of a data access arrangement (DAA) 787, wherein this DAA may comprise a single isolation element or a mixture of multiple isolating elements in parallel such as capacitors, transformers, and optical isolators. The analog communication system comprises an analog to digital converter 539 having an analog

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output S(t) connected the DAA; an analog to digital (A/D) converter 785 having an input coupled to the analog output of the DAA for providing a digital output [Figs. 10-12, 18; col. 31, lines 14-56; col. 34, lines 15-34].

Ehlig et al teaches a generic DAA; it does not disclose expressly an isolation element, such as capacitor or a transformer of the DAA.

Rahamim et al discloses isolation barriers with capacitors and transformers [Figs. 3B-3E].

Ehlig et al and Rahamim et al are analogous art because they are from a similar problem solving area, viz. , telephonic communications across a DAA.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the isolation element of the DAA of Rahamim et al with Ehlig et al.

The suggestion/motivation for doing so would have been to provide an explicit description of the DAA for its operational use with the Ehlig et al system.

Regarding claims 2-7 and 17-20, Ehlig et al teaches an encoder 527, and a digital modulator 533 connected the D/A 539 [Fig. 10]. He also teaches sending digital output from the A/D converter to a demodulator and a decoder 551 [Figs. 12, 18].

Further, a constant average voltage denotes an inherent feature of an analog communication system across an isolation barrier. All other limitations are shown above.

Regarding claims 8-11, the combination of Ehlig et al and Rahamim et al discloses isolation barriers with capacitors and transformers [Rahamim et al; Figs. 3B-3E]; and teaches terminating resistances 412, 413 and 430, 426 across the isolation barrier [Rahamim et al; Fig. 5]. All other limitations are shown above.

Regarding claims 13-16, Ehlig et al teaches data and control information [Fig. 16] supplied by two-way communication paths DSP 653 and a second device 11 [col. 32, lines 66-67; col. 33, lines 1-16]. All other limitations are shown above.

Regarding claims 21-23, Ehlig et al teaches analog communication with a bi-directional isolation system 787 [Fig. 18]. All other limitations are shown above.

Regarding claim 24, Ehlig et al teaches an echo canceller 515 to improve the transmission of a communication circuit [Fig. 9; col. 27, lines 54-62; col. 31, lines 7-13]. All other limitations are shown above.

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8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ehlig et al and Rahamim et al as applied to claims 1-11 above, and further in view of Chea, Jr. [US 4,387,273].

Regarding claim 12, the combination of Ehlig et al and Rahamim et al does not teach expressly a common mode interference signal sensing circuit and a summing circuit to remove the common mode interference signal.

Chea, Jr. teaches a common mode interference signal sensing circuit and a summing circuit to remove the common mode interference signal [col. 2, lines 64-67; col. 3, lines 1-3; col. 6, lines 36-54; col. 1, lines 55-67].

Ehlig et al, Rahamim et al and Chea, Jr. are analogous art because they are from a similar problem solving area, viz. , telephonic communications.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the common mode rejection technique of Chea with the combined system Ehlig et al and Rahamim et al.

The suggestion/motivation for doing so would have been to reduce the power dissipation in the interface circuitry of the isolation barrier [ Chea, Jr. ; col. 1, lines 7-12].

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (i) Ehlig et al [US 6,134,578] teaches operation of a data processing device using analog communications; (ii) Zanzig teaches common mode noise reduction [col. 2, 22-29; col. 3, lines 6-32; col. 3, lines 52-67; col. 4, lines 1-2; col. 6, lines 1-17; col. 6, lines 30-46].

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Ramnandan Singh whose telephone number is (703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-0377.

Dr. Ramnandan Singh  
Examiner  
Art Unit 2644



September 9, 2002



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